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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/712,554

11/12/2003

Hiroyuki Shinbata

1232-5203

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EXAMINER

WANG, CLAIRE X

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

07/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/712,554	Applicant(s) SHINBATA, HIROYUKI	
	Examiner Claire Wang	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicants' response to the last Office Action, filed on April 23rd, 2007 has been entered and made of record.
2. The objection of claim 8 is rendered moot by applicant's cancellation of claim 8.
3. In view of the Applicant's amendments, the specification objection on page 2, line 2 is expressly withdrawn.
4. In view of the Applicant's amendments, the claim objections of claims 2-4 are expressly withdrawn.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Shinbata (US 2002/00114504 A1).

As to claim 1, an image processing apparatus (image processing apparatus; 2100 Fig. 20) comprising first means for obtaining a processed image by sorting pixels of an original image (this is just generating a histogram; Histogram forming unit 2131a Fig. 24) into an order from pixels having higher pixel values to pixels having lower pixel values (the density value for the entire image may be sorted; Paragraph [0076], lines 3-4); second means for calculating a characteristic value (characteristic value calculation unit; 2131 Fig. 24) from a predetermined region of the processed image; and gradation transforming means (gradation conversion processing unit; 2141 Fig. 20) for executing gradation transformation processing of the original image based on the characteristic value (Fig. 20 clearly shows that the gradation conversion is done after the step of characteristic valued calculation is completed).

As to claim 2, the apparatus according to claim 1, further comprising irradiation region (irradiation area extraction; 2120 Fig. 20) recognizing means for extracting an irradiation region from the original image, wherein said first means executes the sorting of images within the extracted irradiation region (the characteristic value is obtained within the irradiation area; Fig. 22 and Fig. 23).

As to claim 3, the apparatus according to claim 1, wherein the predetermined region for the calculation by said second means is set as a region separated at a predetermined distance from an end on a low-pixel-value side in the processed image (Fig. 19 shows the value Th3 is the lower density limit in a plain image, which is extracted from the histogram; Thus Th3 indicates the predetermined distance from an end on the side of a low pixel value in the histogram).

As to claim 5, it is the same as claim 1. The only difference between the two claims is that claim 5 teaches the image processing apparatus of claim 1 further comprises a two-dimensions X-ray sensor for transforming the radiation into a radiation image (Fig. 3 shows an image obtained using X-ray).

As to claim 6, it is the method claim of claim 1. Therefore it is analyzed in the same way as claim 1. Please see above for details.

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As to claim 7, a program stored on a computer-readable medium for making a computer realize said image processing method according to claim 6.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinbata in view of Isobe et al. (US 5,995,108) (this point forward will be referred to as Isobe).

As to claim 4, Shinbata teaches the radiation image contains a hand (Fig. 12) and lungs (Fig. 22). However Shinbata does not teach wherein the original image contains one or more regions of a gas part and a spinal part in the image. Isobe teaches a 3D imaging system that calculates the density of each object to be imaged. Isobe's imaging system shows the bone surface image (214 Fig. 9) also shows air area density (233 Fig. 3). Thus Isobe's imaging system that can image both air and bone reads on the claimed imaging system that contains both gas part and spinal part of an image. Therefore, it is obvious to one ordinarily skilled in the art at the time of the invention to combine Shinbata's radiation imaging system with Isobe's imaging system in order to better represent bone in an X-ray imaging system.

Response to Arguments

9. Applicant's arguments filed April 23rd, 2007 have been fully considered but they are not persuasive.

10. As to applicant's argument that Shinbata does not teach obtaining a processed image by sorting pixels of an original image into an order from pixels having higher pixel values to pixels having lower pixel values, it is noted that Shinbata teaches after a histogram is generated of image 300, the density values for the entire image may be sorted ([0076]).

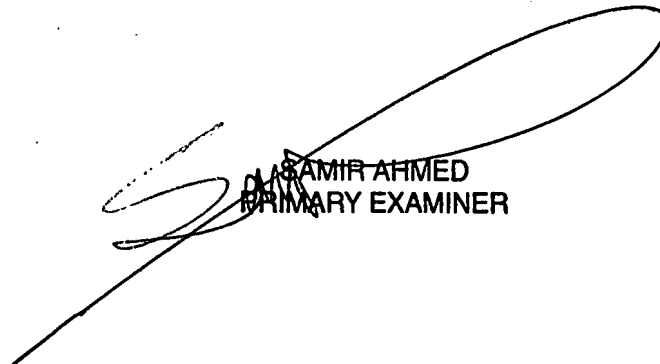
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Claire Wang whose telephone number is 571-270-1051. The examiner can normally be reached on Mid-day flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Claire Wang
07/04/2007



SAMIR AHMED
PRIMARY EXAMINER